



### How Do Achievement Goals Affect Statistics Anxiety? The Mediation of Academic Engagement

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#### Abstract

Statistics anxiety has a positive relationship with academic drop-out and deserves greater attention. This study examines a model explaining the impact of students' achievement goals on their statistics anxiety through levels of their academic engagement. Three hundred and fifteen undergraduate students (53 males and 262 females) who studied educational sciences and psychology in the state universities of Tehran and registered for courses of descriptive or inferential statistics were studied. Participants responded the questionnaire measuring subscales of students' achievement goals (Middleton and Midgley, 1997), statistics anxiety rating scale (STARS) (Cruise et al., 1985), effort (Dupeyrat & Mariné, 2005) and metacognitive strategies and task value (Pintrich & et al., 1991). Path analysis indicated that mastery goals and academic engagement had direct negative effects on statistics anxiety ( $P < 0.01$ ), whereas performance-approach and performance-avoidance goals had direct positive effects on it ( $P < 0.01$ ). Although performance-approach goals had direct negative effects on two subscales of academic engagement (metacognitive strategies and task value), they affected effort positively ( $P < 0.01$ ). Additionally, while mastery goals had direct positive effects on academic engagement, performance-avoidance goals negatively affected it ( $P < 0.01$ ). Thus, achievement goals negatively affected statistics anxiety through academic engagement ( $P < 0.01$ ). Overall, the tested model predicted 0.35 of variance of statistics anxiety. In consistent with goals' literature, results suggest that students with adaptive and maladaptive goals' patterns fundamentally differ in experiencing statistics anxiety. However, the direct positive effects of maladaptive goals' pattern on statistics anxiety can be mediated by students' academic engagement. This has implications for teachers to consider the fact that even when students pursue maladaptive goals, their statistics anxiety can be reduced as long as the instructor provides mastery class structure to engage them in academic tasks.

**Keywords:** Achievement Goals, Statistics Anxiety, Academic Engagement.

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